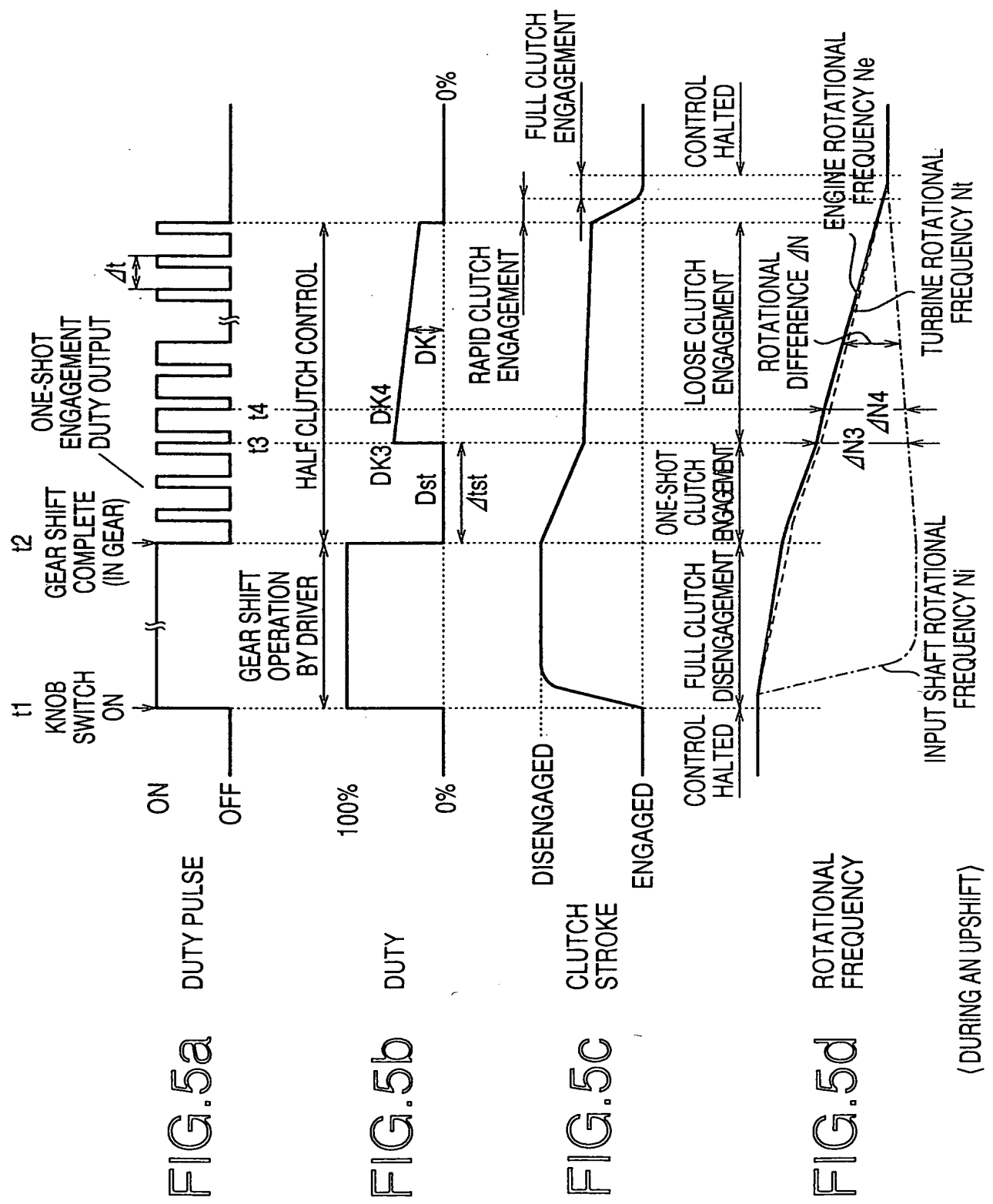


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McCormick, Paulding & Huber LLP  
Title: GEAR STAGE DETECTION DEVICE  
First Named Inventor: Takumi Shinojima  
Serial Number: 10/606,572  
Attorney Docket Number: 5616-74

Replacement Sheet



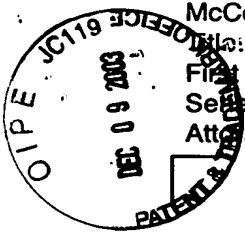


FIG.4

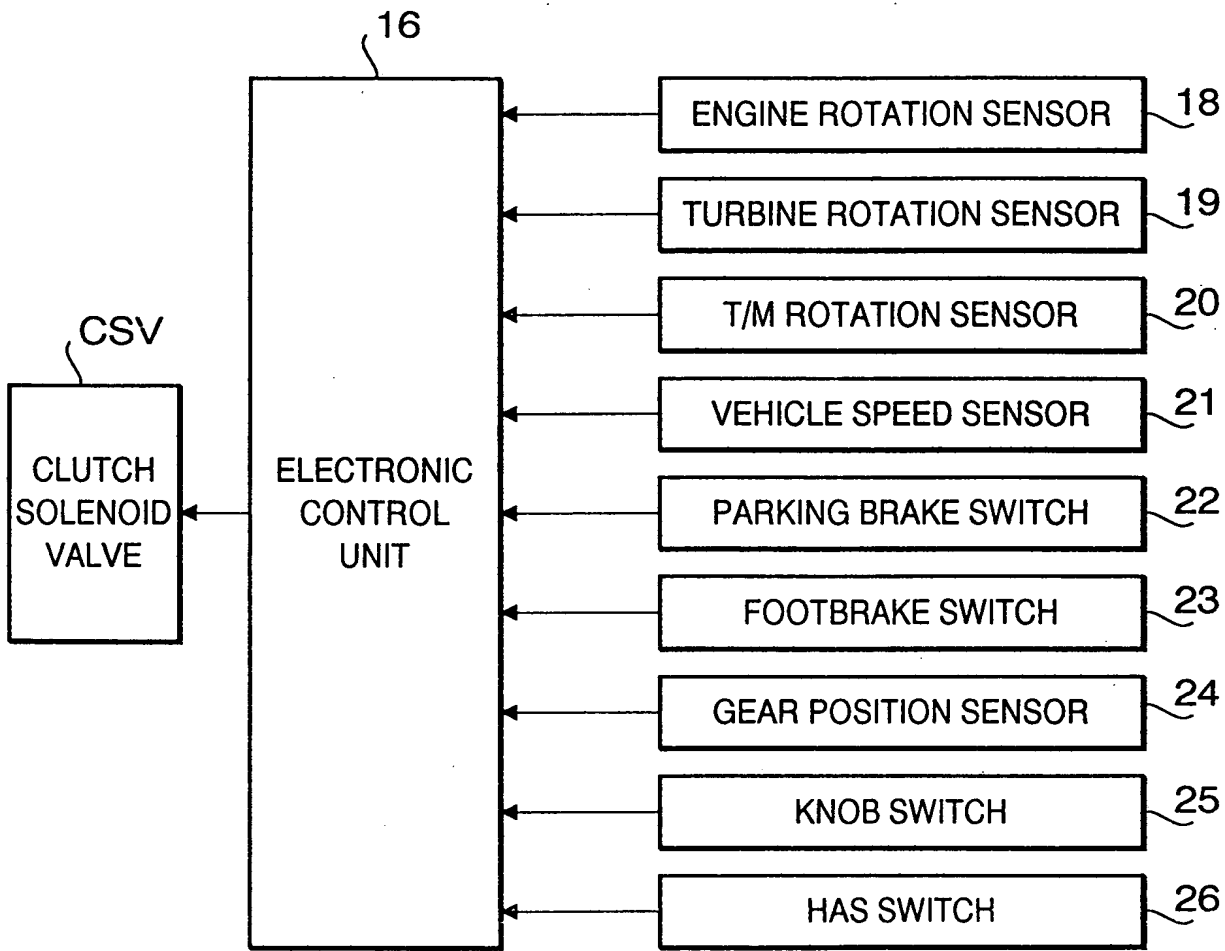


FIG. 2

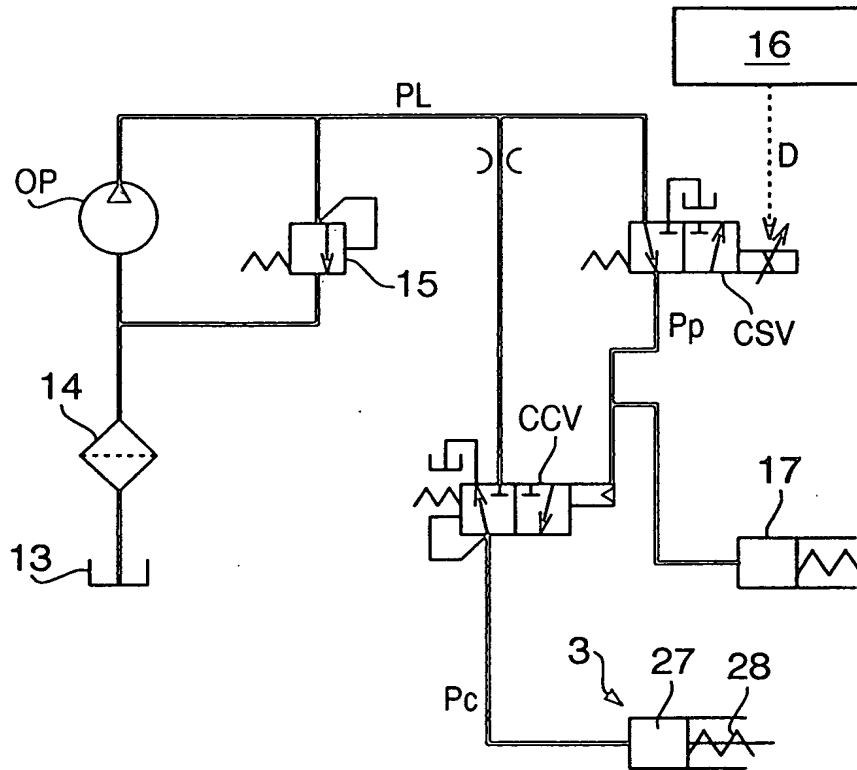
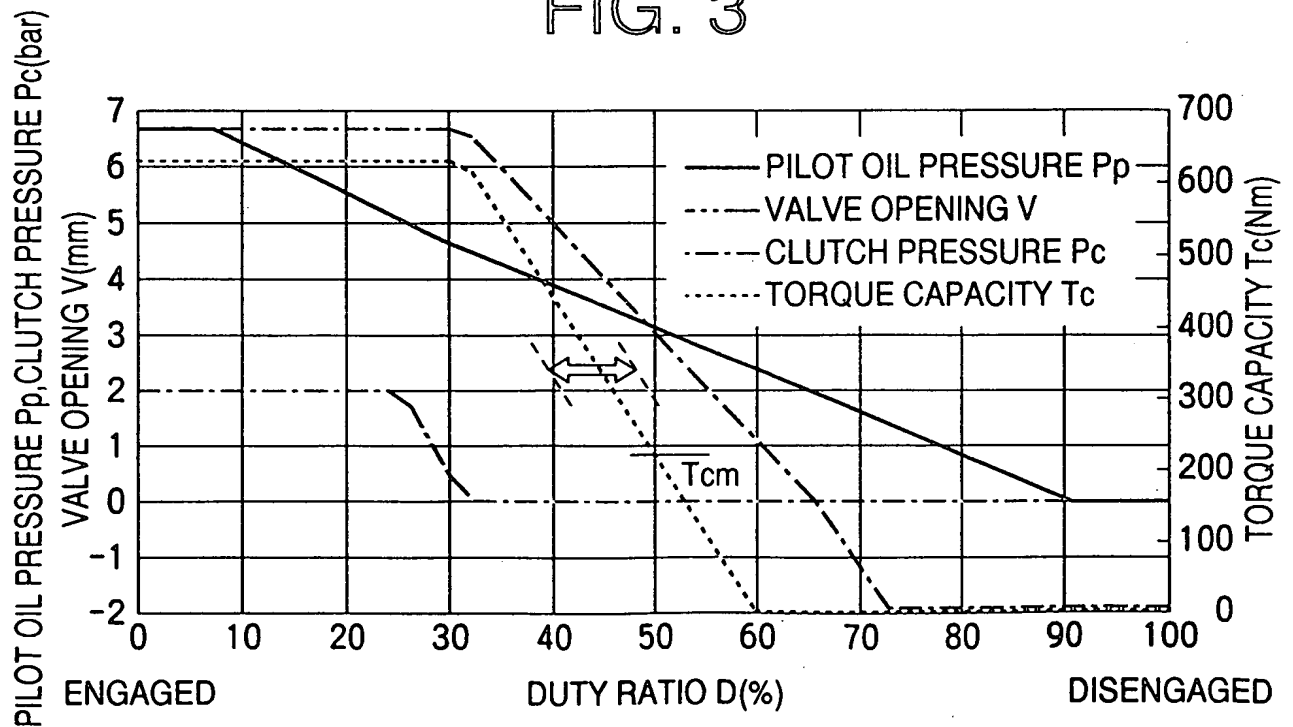
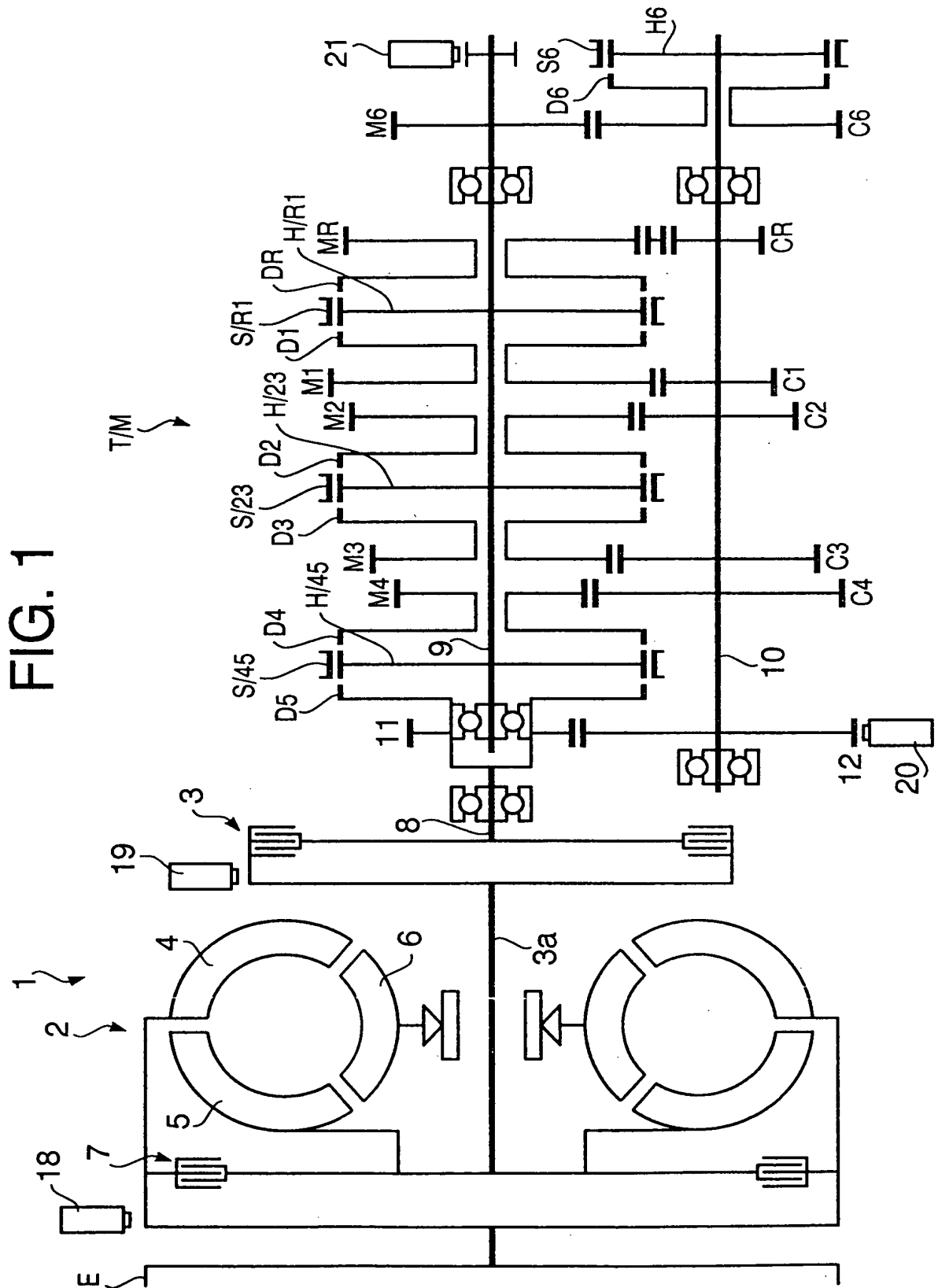


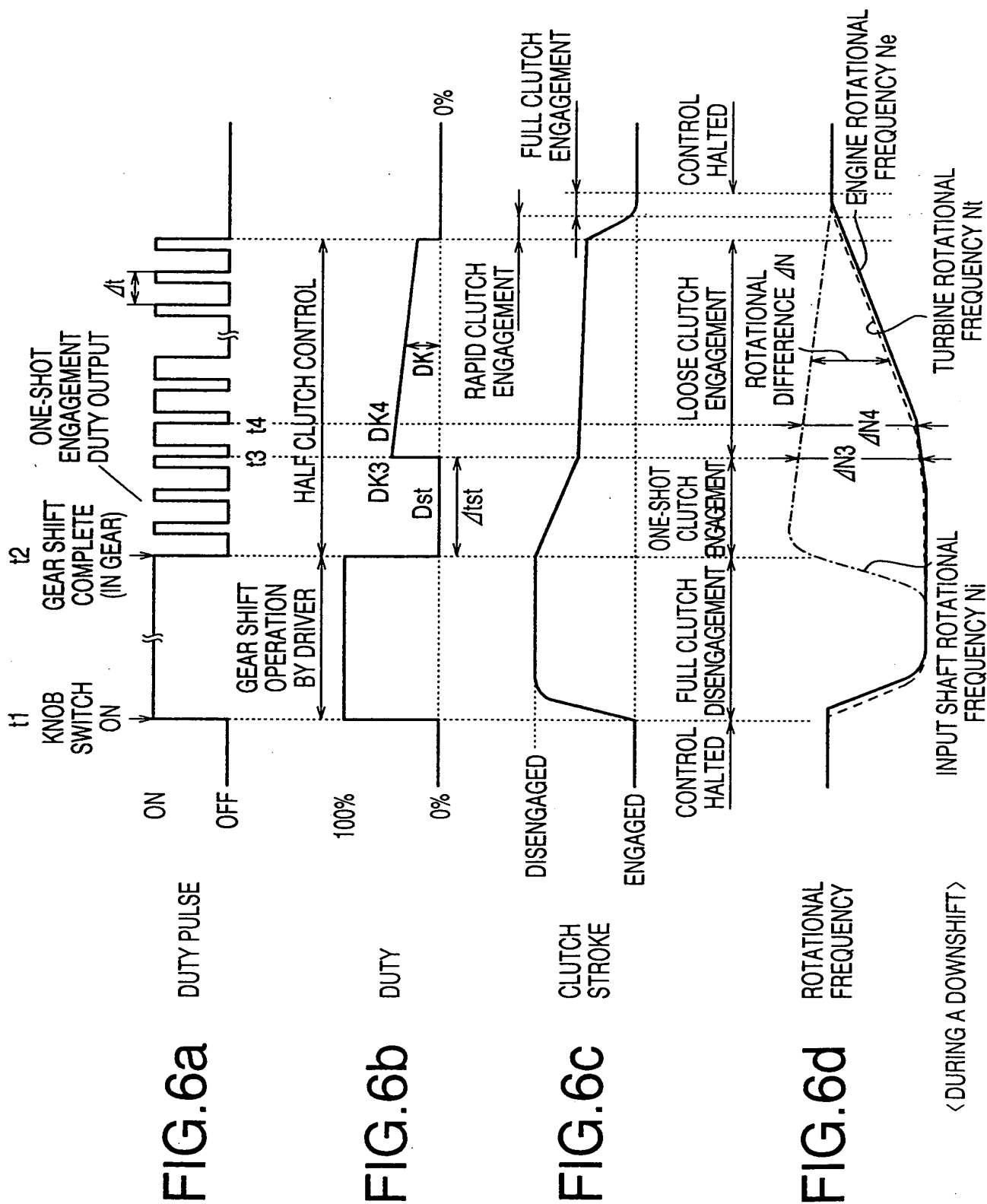
FIG. 3

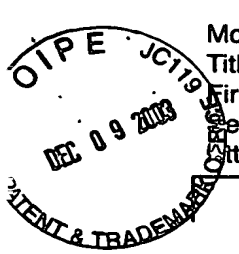




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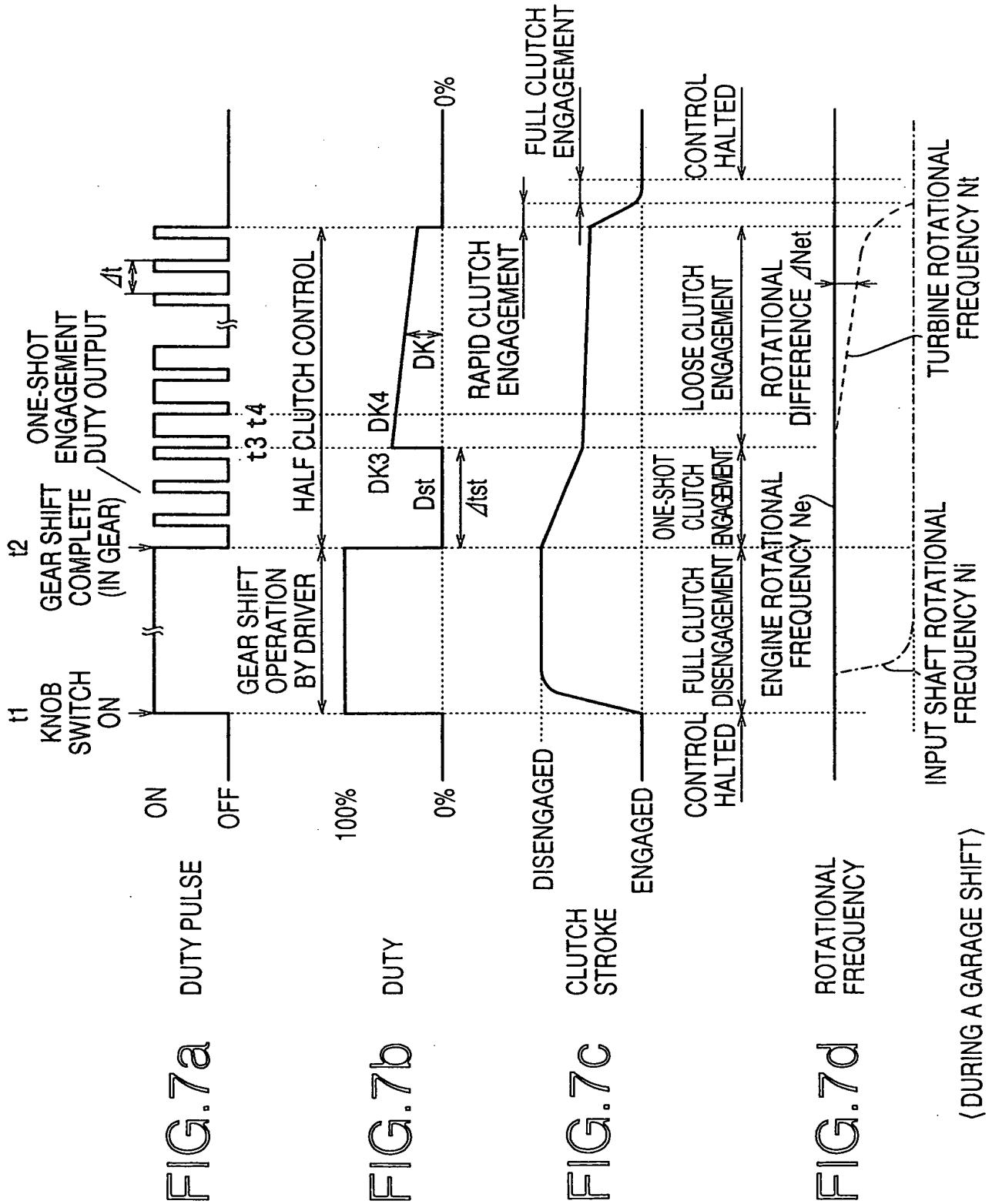




FIG. 8

$\Delta N$

GEAR STAGE

Ds	160rpm	320rpm	480rpm	640rpm	800rpm	960rpm	1120rpm	1280rpm
R GEAR	0005(H)	0030(H)	0040(H)	0050(H)	0060(H)	0070(H)	0080(H)	0090(H)
1st SPEED	0005(H)	0030(H)	0030(H)	0030(H)	0040(H)	0040(H)	0040(H)	0050(H)
2nd SPEED	0005(H)	0030(H)	0030(H)	0030(H)	0040(H)	0040(H)	0040(H)	0050(H)
3rd SPEED	0005(H)	0050(H)	0060(H)	0070(H)	0080(H)	0090(H)	00A0(H)	00B0(H)
4th SPEED	0100(H)	0100(H)	0100(H)	0100(H)	0100(H)	0200(H)	0300(H)	0400(H)
5th SPEED	0100(H)	0100(H)	0100(H)	0100(H)	0100(H)	0200(H)	0300(H)	0400(H)
6th SPEED	0100(H)	0100(H)	0100(H)	0100(H)	0100(H)	0200(H)	0300(H)	0400(H)

<DURING AN UPSHIFT>

FIG. 9

$\Delta N$

GEAR STAGE

Ds	160rpm	320rpm	480rpm	640rpm	800rpm	960rpm	1120rpm	1280rpm
R GEAR	0005(H)	0008(H)	0008(H)	0008(H)	0010(H)	0020(H)	0030(H)	0030(H)
1st SPEED	0005(H)	0005(H)	0008(H)	0008(H)	0010(H)	0020(H)	0030(H)	0030(H)
2nd SPEED	0005(H)	0005(H)	0008(H)	0008(H)	0010(H)	0020(H)	0030(H)	0030(H)
3rd SPEED	0005(H)	0005(H)	0010(H)	0010(H)	0020(H)	0030(H)	0040(H)	0050(H)
4th SPEED	0005(H)	0800(H)	0100(H)	0200(H)	0100(H)	0100(H)	0080(H)	0080(H)
5th SPEED	0100(H)	0200(H)	0200(H)	0200(H)	0100(H)	0100(H)	0080(H)	0080(H)
6th SPEED	0100(H)	0200(H)	0200(H)	0200(H)	0100(H)	0100(H)	0080(H)	0080(H)

<DURING A DOWNSHIFT>



McCormick, Paulding & Huber LLP  
Title: GEAR STAGE DETECTION DEVICE  
First Name of Inventor: Takumi Shinojima  
Serial Number: 10/606,572  
Attorney Docket Number: 5616-74

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FIG.10

$\Delta N$

GEAR STAGE

Ds	0rpm	40rpm	80rpm	120rpm	160rpm	200rpm	240rpm	280rpm
R GEAR	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)
1st SPEED	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)
2nd SPEED	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)
3rd SPEED	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)
4th SPEED	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)
5th SPEED	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)
6th SPEED	0040(H)	0030(H)	0020(H)	0010(H)	0010(H)	0010(H)	00A0(H)	0000(H)

<DURING A GARAGE SHIFT>





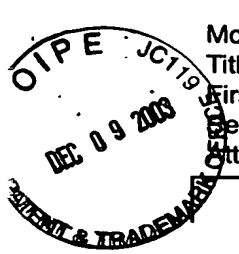


FIG.11

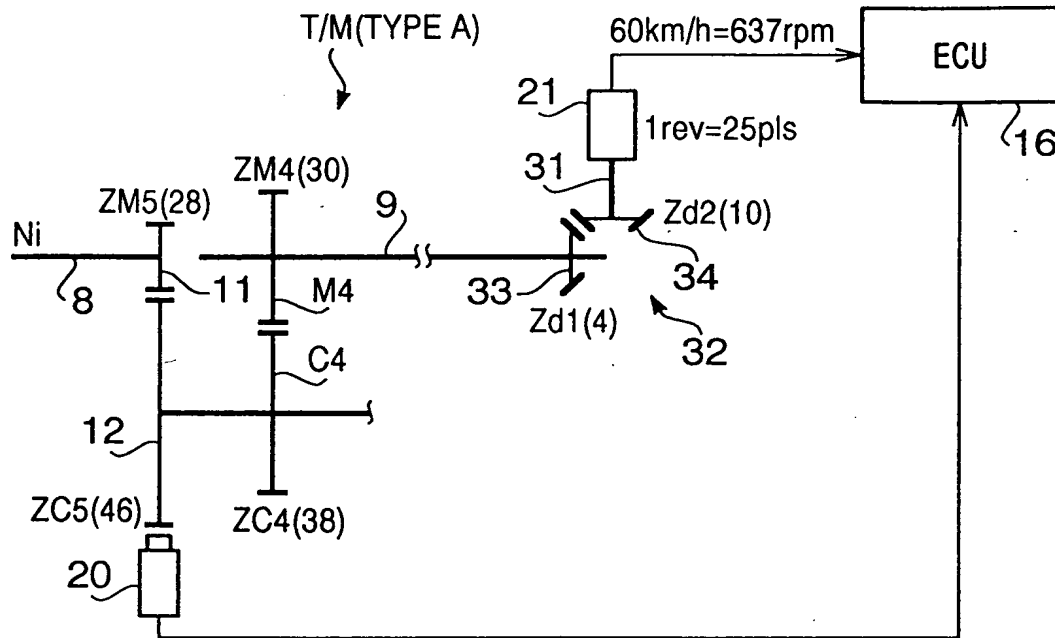


FIG.12

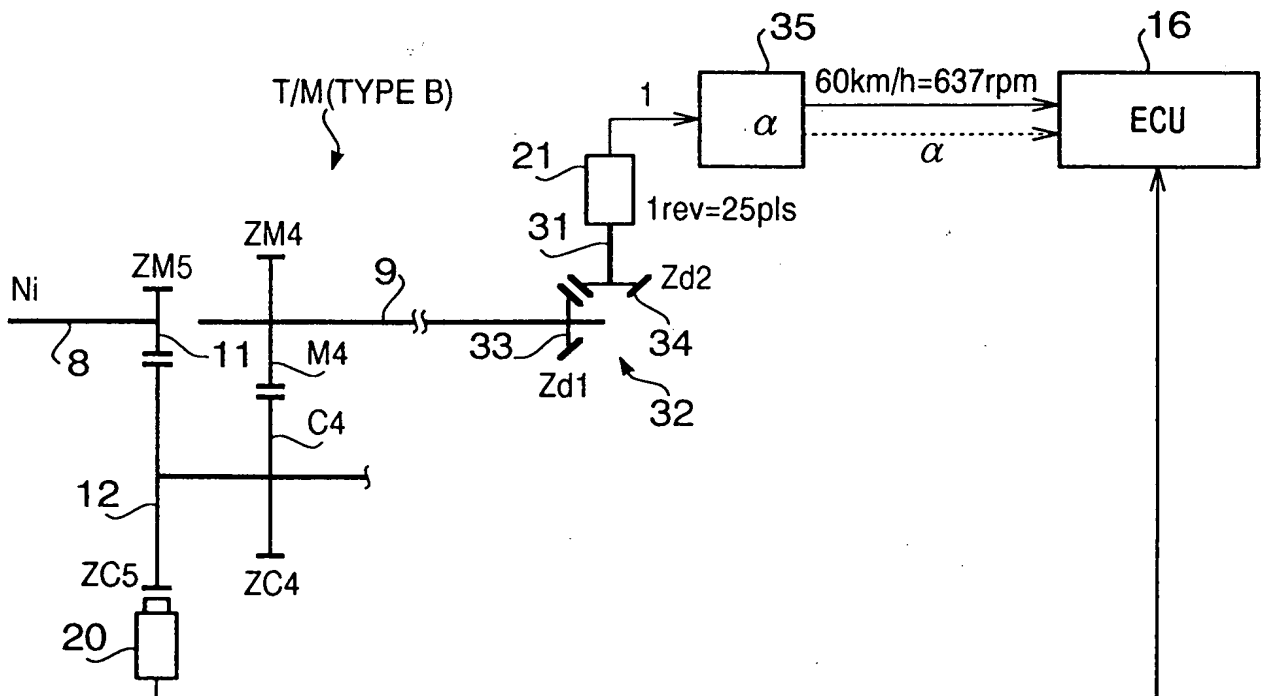




FIG.13a

GEAR STAGE	GEAR RATIO (REDUCTION GEAR RATIO)GR	(Nd)
Rev	5.068	69.0
1st	5.315	69.0
2nd	2.908	69.0
3rd	1.558	69.0
4th	1.000	70.0
5th	0.721	69.0

FIG.13b

PTM
354.0
372.0
203.0
109.0
70.0
50.0

FIG.14

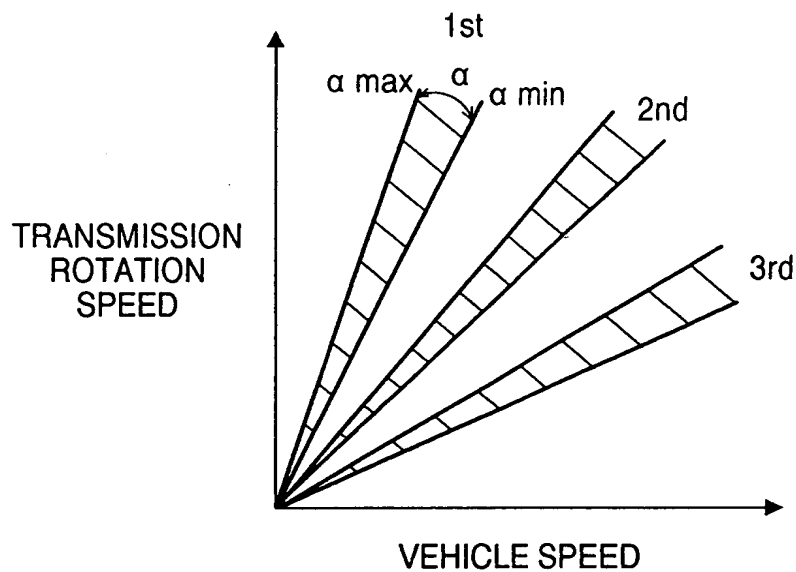
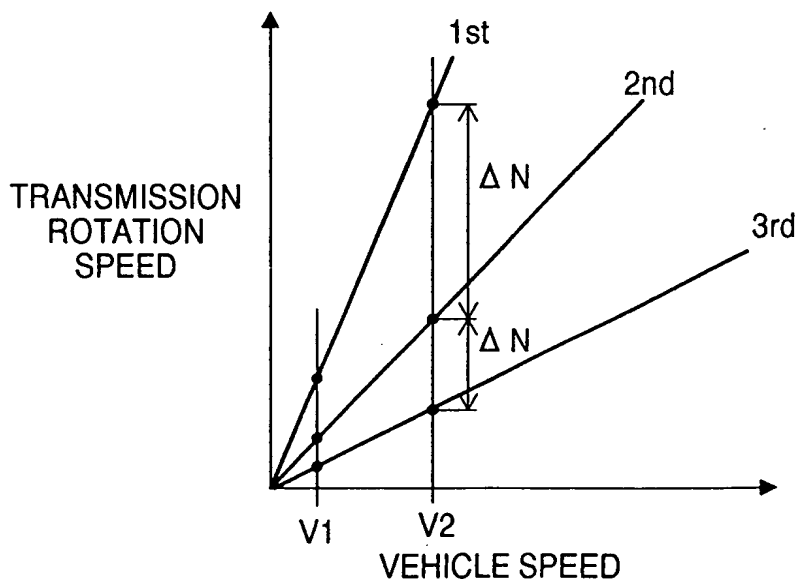


FIG.15



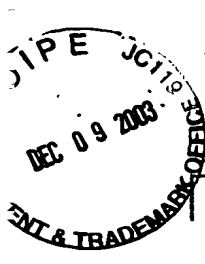
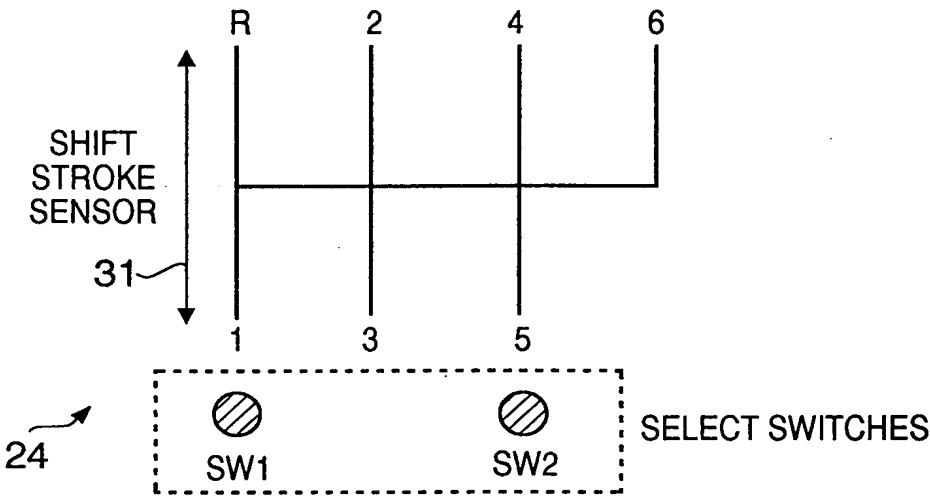


FIG.16



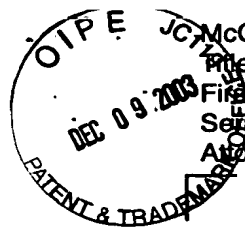


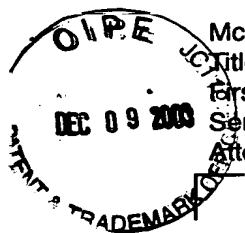
FIG.17

NUMBER OF TEETH OF DRIVEN GEAR													
GEAR STAGE	REDUCTION GEAR RATIO	10		11		12		13		...	17		
		PTM	Nd	PTM	Nd	PTM	Nd	PTM	Nd		PTM	Nd	
Rev	5.701	394.0	69.0	434.0	76.0	474.0	83.0	514.0	90.0	...	668.0	117.0	
1st	5.979	413.0	69.0	455.0	76.0	497.0	83.0	539.0	90.0	...	706.0	118.0	
2nd	3.434	237.0	69.0	261.0	76.0	286.0	83.0	310.0	90.0	...	406.0	118.0	
3rd	1.862	129.0	69.0	142.0	76.0	155.0	83.0	168.0	90.0	...	220.0	118.0	
4th	1.297	90.0	69.0	99.0	76.0	108.0	83.0	117.0	90.0	...	154.0	118.0	
5th	1.000	70.0	70.0	76.0	76.0	84.0	84.0	90.0	90.0	...	118.0	118.0	
6th	0.774	54.0	69.0	59.0	76.0	65.0	83.0	70.0	90.0	...	92.0	118.0	
FAIL	Rev	394.0	114.0	434.0	126.0	474.0	138.0	514.0	149.0	...	668.0	194.0	
	1ST	413.0	221.0	455.0	244.0	497.0	266.0	539.0	289.0	...	706.0	379.0	
	4TH	90.0	26.0	99.0	28.0	108.0	31.0	117.0	34.0	...	154.0	44.0	
	5TH	70.0	37.0	76.0	40.0	84.0	45.0	90.0	48.0	...	118.0	63.0	
	6TH	54.0	15.0	59.0	17.0	65.0	18.0	70.0	20.0	...	92.0	26.0	



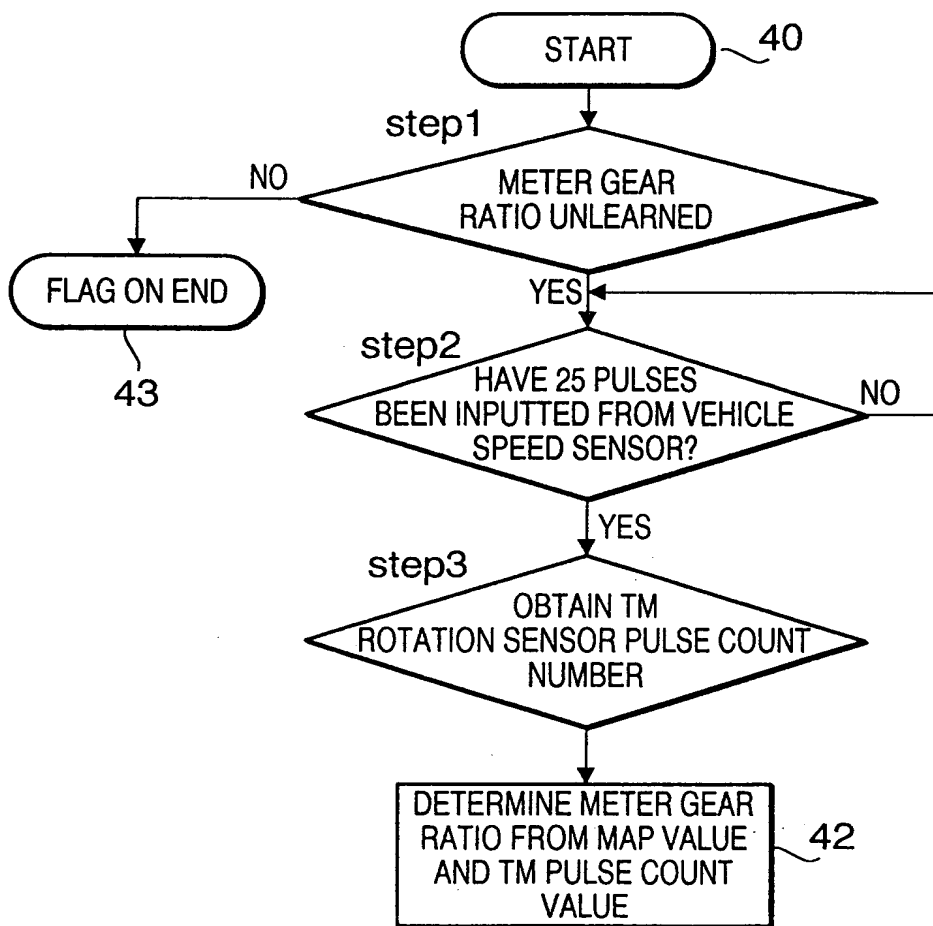
FIG.18

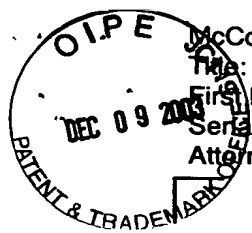
NUMBER OF TEETH OF DRIVEN GEAR														
GEAR STAGE	REDUCTION GEAR RATIO	10			11			12			13			17
		PTM	Nd		PTM	Nd		PTM	Nd		PTM	Nd		
Rev	5.068	354.0	69.0		390.0	76.0		425.0	83.0		461.0	90.0		117.0
1st	5.315	372.0	69.0		409.0	76.0		446.0	83.0		483.0	90.0		118.0
2nd	2.908	203.0	69.0		223.0	76.0		244.0	83.0		264.0	90.0		118.0
3rd	1.558	109.0	69.0		119.0	76.0		130.0	83.0		141.0	90.0		118.0
4th	1.000	70.0	70.0		77.0	77.0		84.0	84.0		91.0	91.0		118.0
5th	0.721	50.0	69.0		76.0	76.0		60.0	83.0		65.0	90.0		118.0
6th														
FAIL	Rev	354.0	121.0		390.0	134.0		425.0	146.0		461.0	158.0		207.0
	1ST	372.0	238.0		409.0	255.0		446.0	255.0		483.0	255.0		255.0
	4TH	70.0	24.0		77.0	26.0		84.0	28.0		91.0	31.0		40.0
	5TH	50.0	32.0		55.0	35.0		60.0	38.0		65.0	41.0		54.0



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FIG.19





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FIG.20

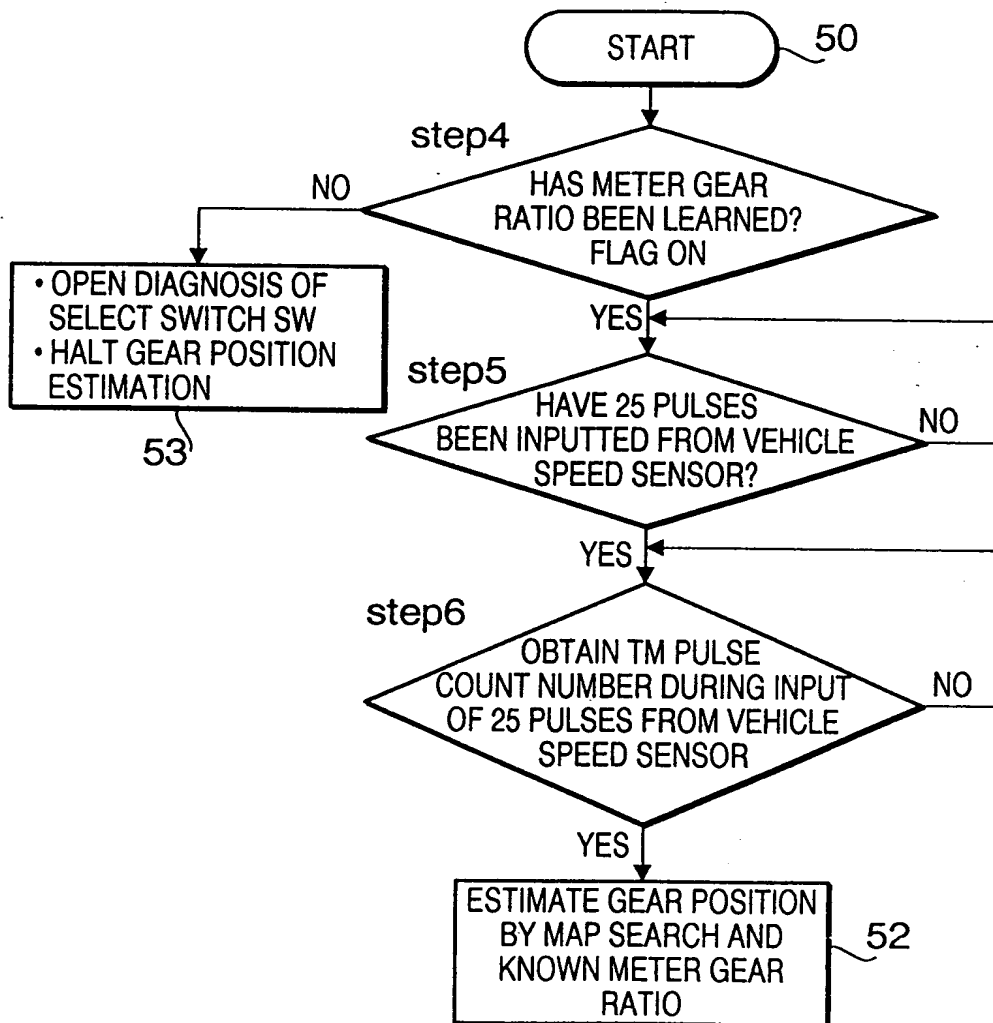






FIG.21

Z TM TYPE	Dri(5th)		4th		3rd		2nd		1st		Rev		6th	
	M	C	M	C	M	C	M	C	M	C	M	C	M	C
C TYPE	ZM5	ZC5	ZM4	ZC4	ZM3	ZMC	ZM2	ZC2	ZM1	ZC1	ZMR	ZCR	ZM6	ZC6
D TYPE	ZM5	ZC5	ZM4	ZC4	ZM3'	ZC3'	ZM2	ZC2	ZM1	ZC1	ZMR	ZC5	ZM6'	ZC6'

FIG.22

